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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/921,714	08/06/2001	Yasuharu Yoshida	Q65726	8770

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EXAMINER	
GENACK, MATTHEW W	
ART UNIT	**PAPER NUMBER**
2645	

DATE MAILED: 01/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/921,714	YOSHIDA, YASUHARU	
	Examiner	Art Unit	
	Matthew W. Genack	2645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *3 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant does not make clear what quantities are involved in the ratios mentioned in both Claims. Examiner interprets these Claims such that each ratio is the amount of time spent scanning frequencies for one type of communication (of the two types of communication) to the total length of time that a cycle lasts (that is, the period of a scan of all frequencies).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando, U.S. Patent No. 6,275,552, in view of Wiatrowski *et. al.*, U.S. Patent No. 5,806,002.

Regarding Claims 1 and 8, Ando discloses a method and system for data communications between roadside equipment and a vehicle's on board equipment using the dedicated short-range communication protocol for the purpose of collecting

tolls (Abstract, Column 6 Lines 58-67, Figs. 1 and 6). A link is established between roadside equipment and the vehicle's on board equipment at one of a set of frequencies that may be selected from, switching between said frequencies being possible (Column 5 Lines 37-42, Figs. 2-3).

Ando does not expressly disclose searching means by which the vehicle's on board equipment searches frequencies used by the roadside equipment, wherein said searching comprises a cyclical switching of radio frequencies whereby radio frequencies for one type of communication are searched for a larger fraction of said cycle than the fraction associated with frequencies for another type of communication.

Wiatrowski *et. al.* discloses a method of priority frequency scanning by a communication unit, said communication unit capable of being associated with an automobile (Abstract, Column 2 Lines 28-35, Fig. 1). A scanning algorithm is used whereby a receiver spends time scanning frequencies for one type of communication (priority) and frequencies for another type of communication (non-priority) (Column 2 Lines 36-44). The scanning algorithm comprises cyclically switching between frequencies for the two types of communication, whereby the receiver is tuned to frequencies for one type of communication (priority) for a fraction of a cycle that is greater than the fraction of a cycle that the receiver is tuned to frequencies for the other type of communication (non-priority) (Fig. 2B).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to modify the invention of Ando by providing for the cyclical switching amongst frequencies transmitted by the roadside equipment, said cyclical

switching involving the vehicle's receiver being tuned to frequencies associated with one type of communication for a fraction of a cycle that is greater than the fraction of a cycle that the receiver is tuned to frequencies for the another type of communication.

One of ordinary skill in the art would have been motivated to make this modification because of the enhancement in efficiency in causing the vehicle's receiver to spend a greater amount of time searching for frequencies associated with a type of communication that is high priority, or difficult to receive, than the period of time spent searching for a frequency associated with a type of communication that is low priority, or easy to receive.

Regarding Claims 2 and 9, Wiatrowski *et. al.* discloses that the communication unit of the invention may participate in both high-speed and low-speed links (Column 9 Lines 31-44).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to further modify the invention of Ando by assigning frequencies dedicated to a high-speed link to the fraction of a cycle that is greater, and assigning the other frequencies, dedicated to a low-speed link, the lesser fraction of the cycle (given the need for the vehicle's communication equipment to engage in a high-speed link and a low-speed link).

One of ordinary skill in the art would have been motivated to make this modification because the scanning for and establishment of a high-speed link is more difficult than the scanning for and establishment of a low-speed link by the communication equipment in a moving vehicle.

Regarding Claims 3 and 10, Wiatrowski *et. al.* discloses that the communication unit of the invention may participate in both high-speed and low-speed links (Column 9 Lines 31-44), and the practice of searching some frequencies more often than other frequencies (Fig. 2B).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to further modify the invention of Ando by providing the means for more frequent searching of frequencies associated with a high-speed link than frequencies associated with a low-speed link.

One of ordinary skill in the art would have been motivated to make this modification because by searching for frequencies associated with the high-speed link more often, there is a higher probability that said high-speed link will be initiated and the necessary information exchanged in the time before said link is eventually broken.

Regarding Claims 4 and 11, Wiatrowski *et. al.* discloses the use of various modulation types and the detection thereof by the communication unit (Column 2 Lines 28-33, Column 6 Lines 62-67, Column 7 Lines 34-41, Column 9 Lines 1-26, Fig. 4), and as a consequence, the use of various demodulation methods by the communication unit's receiver when said receiver switches between radio frequencies associated with different modulation types.

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to further modify the invention of Ando by providing means to switch the demodulation method employed by the receiver of the vehicle's communication equipment when said receiver switches frequencies.

One of ordinary skill in the art would have been motivated to make this modification because different frequencies may be associated with different modulation methods.

Regarding Claims 5 and 12, Wiatrowski *et. al.* discloses the division into talk groups of the frequencies used by the communication unit (Column 2 Lines 28-33 and 60-63, Column 9 Lines 1-26).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to further modify the invention of Ando by dividing, *a priori*, the frequencies into various groups and to conduct searches by cyclically frequencies in a given group.

One of ordinary skill in the art would have been motivated to make this modification because there may be instances in which either the user or the vehicle's equipment is aware of their presence in a given short range communication zone that only uses frequencies pertaining to a certain group, and the search for the proper frequency may be thus expedited by only scanning frequencies belonging to this group.

Regarding Claims 6 and 13, Wiatrowski *et. al.* discloses the possibility that one talk group is identical to a second talk group (Column 2 Lines 63-67).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to further modify the invention of Ando by providing for talk groups that overlap.

One of ordinary skill in the art would have been motivated to make this modification because of the potential for conserving the use of frequency spectrum via

the reuse of frequencies in two or more groups (and groups associated with separate pieces of roadside separated from one another geographically), which is made possible by the short range nature of the system of the invention.

Regarding Claim 7, Ando discloses the presence of vehicle dedicated short range communication equipment and roadside dedicated short range equipment (Column 6 Lines 58-67, Figs. 1 and 6).

Response to Arguments

5. Applicant's arguments filed 3 October 2005 have been fully considered but they are not persuasive. Contrary to Applicant's claim (Page 10 Lines 11-15) that Figure 3 of Wiatrowski *et. al.* was relied on in the previous Office Action, it was not. Wiatrowski *et. al.* discloses cyclical scanning of a plurality of frequencies that takes place until activity is detected, said frequencies being divided into groups corresponding to two types of communication (priority and non-priority), the fractions of the cycle that are spent on each group being unequal (Column 4 Lines 10-18, Fig. 2A).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew W. Genack whose telephone number is 571-272-7541. The examiner can normally be reached on FLEX.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on 571-272-7547. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Matthew Genack

Examiner

Art Unit 2645

Matthew Genack

14 December 2005

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